

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013014**Date Inspected:** 31-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

CWI Inspectors: Mr. Liu Hua Jie, Mr. Li Yan Hua

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Liu Ming, stencil 044790 has recently used flux cored welding procedure WPS-B-T-2232-TC-U4b-F to make OBG segment 12CE, deck plate DP3018-001-9, 12,15,18,20. These welds repair are being made due to ultrasonic rejections and are documented on a temporary repair document. This deck plate weld is being made near the center of OBG Bay 14. This QA Inspector observed QC has recorded a welding current of 307 amps and 30.5 volts. This QA Inspector observed that Mr. Liu Ming appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhao Jibo, stencil 055564 has recently used flux cored welding procedure WPS-B-T-2133 to make OBG weld SEG3002L-017, 018, 019. These welds are in OBG segment 12AE near panel point 110. This QA Inspector observed QC has recorded welding current of 215 amps and 24.9 volts. This QA Inspector observed that Mr. Zhao Jibo appears to be certified to make this weld. Items observed on this

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date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wu Wanyong, stencil 050242 has recently used flux cored welding procedure WPS-B-T-2233-B-U2-F to make OBG weld SEG3001L-140 through 112. These welds are in OBG segment 12AE near panel points 110 through 112. This QA Inspector observed QC has recorded welding current of 221 amps and 25.3 volts. This QA Inspector observed that Mr. Wu Wanyong appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jin Chen Mao, stencil 058551 is using flux cored welding procedure WPS-B-T-2133 to make OBG weld SEG3002B-019 at OBG segment 12AE. ZPMC QC has recorded a welding current of 217 amps and 25.2 volts. This QA Inspector observed that Mr. Jin Chen Mao is certified to make this weld and the base material was preheated with a torch prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tu Zhi Wu, stencil 214945 is using flux cored welding procedure WPS-B-T-2133 to make OBG segment 12CE corner assembly CA3004E-241 through -250. This QA Inspector observed QC has recorded a welding current of 312 amps and 30.7 volts. This QA Inspector observed that Mr. Tu Zhi Wu appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Hue Junrong, stencil 201215 is using flux cored welding procedure WPS-B-T-2232 to make OBG weld SEG3006T-041. This weld is located in OBG segment 12CW. This QA Inspector observed ZPMC QC has recorded a welding current of 312 amps and 31.2 volts. This QA Inspector observed Ms. Hue Junrong appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

Yard between Bay 15 and Blast Shop #1

This QA Inspector observed ZPMC welder Mr. Kua Wen Shau, stencil 054013 is using shielded metal arc process to make repair weld SEG056A-010 on OBG segment 9DE at panel point 80. As this QA Inspector arrived Mr. Kua Wen Shau stopped welding, dropped his welding electrode holder to the ground and quickly ducked underneath the OBG and rapidly walked in the opposite direction from where this QA Inspector was approaching this weld. This QA Inspector followed Mr. Kua Wen Shau underneath the OBG and when requested, Mr. Kua Wen Shau stopped walking and showed this QA Inspector his ZPMC welder certification card which shows he is certified to perform overhead welding. This QA Inspector felt the steel adjacent to where this welding had taken place and the steel appeared to be an ambient temperature instead of being preheated as required by the welding procedure. This QA Inspector went to OBG Bay 14 and contacted ABF representative Mr. Wang Heng who then called ZPMC CWI Mr. Li Yan Hua and asked him to come to OBG segment 9DE. Mr. Li Yan Hua arrived at OBG segment 9DE approximately 10 minutes later and this QA Inspector informed him that ZPMC welder Mr. Kua Wen Shau appears to have been performing weld repairs without first preheating the base material. ZPMC CWI Mr. Li Yan Hua informed this QA Inspector that he will have the weld material ground out and this area will be MT inspected prior to performing any additional welding repairs. ZPMC CWI Mr. Li Yan Hua also told this QA Inspector that he will make sure that base materials are preheated prior to additional welding in this location. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated

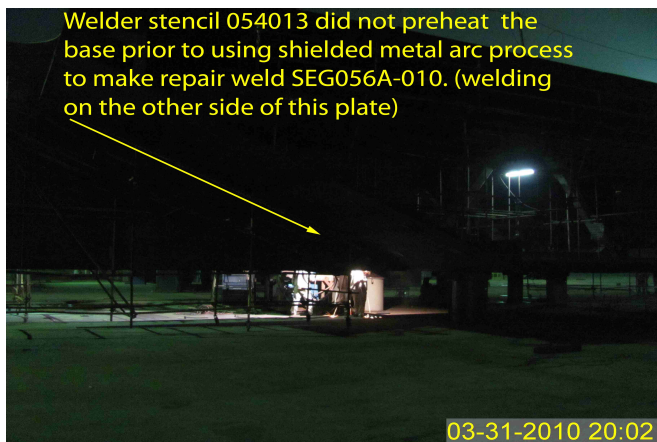
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electrode storage container which is cold to the touch and it does not appear to be connected to the welding power supply cable. ZPMC CWI Mr. Li Yan Hua informed this QA Inspector the shielded metal electrodes will be returned to the welding material issuing office. Items observed on this date do not appear to generally comply with applicable contract documents. See the photographs below for additional information.

Segment Trial Assembly

ABF issued "Inspection Notification Sheet" number 03312010-1 item #1 informing QA that on 3-31-2010 at 19:00 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld CA039-004 which joins OBG segment 7CE deck plate to edge plate weld E5. This weld is located in the trial assembly area. This QA Inspector was informed by ABF/Sense UT inspection personnel that two locations, Y=6860 (millimeters) and Y=7710, are both UT rejected. This QA Inspector performed ultrasonic inspections at each of the the five weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and this QA Inspector observed ABF Inspectors had indicated Y=10930 has a +20 rated transverse indication and this QA Inspector observed this indication has a +13 rating. ABF indicated Y=16930 has a +21 rated transverse indication and this QA Inspector observed this indication has a +17 rating. ABF indicated Y=17175 has a +20 rated transverse indication and this QA Inspector observed this indication has a +17 rating. This QA Inspector issued a UT rejection data sheet which was attached to the ABF "Verification Witness Request" document. This QA Inspector had previously been informed that Caltrans management has directed that no incident reports are to be issued for these types of UT inspections. The remainder of the weld repair areas appeared to generally comply with applicable contract documents. Note: These inspections are being documented and tracked on "Verification Witness Request" documentation and no TL-6027 UT report was issued for these inspections.



Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
